

ABSTRACT OF THE DISCLOSURE

A method of bonding and packaging components of Micro-Electro-Mechanical Systems (MEMS) and MEMS based devices using a Solid-Liquid InterDiffusion (SLID) process is provided. A micro-machine is bonded to a micro-machine chip using bonding materials. A layer of chromium is first deposited onto surfaces of the micro-machine and the micro-machine chip followed by a layer of gold. Subsequently, a layer of indium is deposited between the layers of gold, and the surface of the micro-machine is pressed against the surface of the micro-machine chip forming a gold-indium alloy to serve as a bond between the micro-machine and the micro-machine chip. In addition, a cover is bonded to the micro-machine chip in the same manner providing a hermetic seal for the MEMS based device.

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